

## ABSTRACT

A photonic crystal directional coupler composed of at least two linear defect waveguides introduced into a photonic crystal. The medium constant and the lattice constant of the photonic crystal at the photonic crystal directional coupling part, the sizes and shapes of the elements constituting the periodical structure of the photonic crystal are varied. Thereby the difference in propagation constant between the even and odd modes of the photonic crystal directional coupling part is increased, thus shortening the coupling length of the photonic crystal directional coupler.